

What is claimed:

1. A method for refilling a print cartridge reservoir, comprising:
tracking an ink volume in the print cartridge reservoir;
tracking an ink volume in a supply tank; and
refilling the print cartridge reservoir from the supply tank when the ink volume in the supply tank substantially equals an ink volume to refill the print cartridge reservoir to a predetermined level.
2. The method of claim 1, wherein tracking the ink volume in the print cartridge reservoir includes using software to track ink consumption during print job processing.
3. The method of claim 1, wherein tracking the ink volume in the supply tank includes using software to track the ink volume transferred from the supply tank to the print cartridge reservoir.
4. The method of claim 3, wherein the ink volume transferred is tracked using electrical probes connected to a flexible conduit coupling the supply tank to the print cartridge reservoir.
5. The method of claim 3, wherein the ink volume transferred is tracked using an optical sensor.
6. A method for refilling a print cartridge reservoir, comprising:
tracking an ink volume consumed from the print cartridge reservoir;
tracking an ink volume transferred from a supply tank to the print cartridge reservoir;
refilling the print cartridge reservoir using a variable refill frequency based on the ink volume consumed from the print cartridge reservoir and the ink volume transferred from the supply tank; and
wherein refilling occurs when a total ink volume remaining in the supply tank is equal to a volume which would refill the print cartridge reservoir to an initial fill level.

7. The method of claim 6, wherein refilling also occurs when the print cartridge reservoir is empty.
8. The method of claim 6, wherein the print cartridge reservoir is located on a moveable print carriage.
9. The method of claim 8, wherein the supply tank is located off-axis from the moveable print carriage.
10. The method of claim 6, wherein one supply tank is used to refill multiple print cartridge reservoirs.
11. The method of claim 6, wherein one print cartridge reservoir is refilled from multiple supply tanks.
12. A method for refilling a print cartridge reservoir, comprising:
 - tracking an ink volume consumed from the print cartridge reservoir during print job processing;
 - tracking an ink volume in a supply tank;
 - refilling the print cartridge reservoir from the supply tank when the print cartridge reservoir is empty; and
 - refilling the print cartridge reservoir when a remaining ink volume available in the supply tank substantially equals an ink volume consumed since a previous print cartridge reservoir refill.
13. A computer readable medium having a set of computer executable instructions thereon for causing a device to perform a method, comprising:
 - tracking an ink volume in a print cartridge reservoir;
 - tracking an ink volume in a supply tank;
 - refilling the print cartridge reservoir on a variable frequency based on both tracked print cartridge reservoir and supply tank ink volumes; and

wherein refilling occurs when an ink volume consumed from the print cartridge reservoir since its last refill substantially equals a total ink volume remaining in the supply tank.

14. The medium of claim 13, further including tracking print cartridge reservoir and supply tank ink volumes based on processed print jobs and ink volumes transferred from the supply tank to the print cartridge reservoir.

15. The medium of claim 13, further including executable instructions to control the transfer of ink from the supply tank to the print cartridge reservoir.

16. The medium of claim 13, wherein the executable instructions control a pumping session of a peristaltic pump.

17. A computer readable medium having a set of computer executable instructions thereon for causing a device to perform a method, comprising:

tracking an ink volume in a print cartridge reservoir;

tracking an ink volume in a supply tank; and

refilling the print cartridge reservoir from the supply tank when the ink volume in the supply tank substantially equals an ink volume to refill the print cartridge reservoir to a predetermined level.

18. An apparatus, comprising:

a supply tank;

a pump;

a print cartridge having a printhead and a print cartridge reservoir;

interface electronics coupling the print cartridge, the pump and the supply tank; and

a set of computer executable instructions operable on the device to;

track an ink volume in the print cartridge reservoir;

track an ink volume in the supply tank; and

transfer ink from the supply tank to the print cartridge reservoir via the pump when an ink volume remaining in the supply tank substantially equals an ink volume used to refill the print cartridge reservoir.

19. The apparatus of claim 18, wherein the pump is a peristaltic pump, and wherein ink is transferred from the supply tank to the print cartridge reservoir through a flexible conduit using the peristaltic pump.
20. The apparatus of claim 19, further including one or more sensors positioned adjacent to the flexible conduit to detect a fluid and air mixture therein.
21. The apparatus of claim 19, wherein the flexible conduit is transparent, and wherein the apparatus further includes a light emitting source and a light detector positioned opposite one another around the transparent flexible conduit.
22. The apparatus of claim 18, wherein a pumping session of the pump is operable to mix ink between the supply tank and the print cartridge reservoir.
23. An image forming device, comprising:
a processor;
memory coupled to the processor; and
an ink transfer and tracking module to;
 track an ink volume in the print cartridge reservoir;
 track an ink volume in the supply tank; and
 transfer ink from the supply tank to the print cartridge reservoir when a total ink volume remaining in the supply tank substantially equals an ink volume to refill the print cartridge reservoir.
24. The device of claim 23 wherein the ink transfer and tracking module includes software to track print cartridge reservoir and supply tank ink volumes based on print job ink consumption.
25. The device of claim 23, wherein the ink transfer and tracking module includes software to track ink volumes based on a pumping session from the supply tank to the print cartridge reservoir.

26. The device of claim 23, where the ink transfer and tracking module includes software to transfer ink from the supply tank to the print cartridge reservoir when the print cartridge reservoir is empty.

27. A printing device, comprising;
a processor;
a memory;
a print cartridge having a printhead and a print cartridge reservoir; and
interface electronics coupling the processor, the memory and the print cartridge;
means for tracking an ink volume in the print cartridge reservoir;
means for tracking an ink volume in a supply tank; and
means for refilling the print cartridge reservoir from the supply tank when an ink volume remaining in the supply tank substantially equals an ink volume to refill the print cartridge reservoir to a predetermined level.

28. The device of claim 27, wherein the means for tracking the ink volume in the print cartridge reservoir and supply tank reservoir includes software for tracking ink volume consumption based on processed print jobs.

29. The device of claim 27, wherein the means for tracking the ink volume in the print cartridge reservoir and supply tank reservoir includes software for tracking ink volume transfer from the supply tank to the print cartridge reservoir.

30. The device of claim 27, means for refilling the print cartridge reservoir from the supply tank when the ink volume remaining in the supply tank substantially equals an ink volume to refill the print cartridge reservoir to a predetermined level includes software operable to track a total ink volume remaining in the supply tank and an amount of ink consumed since a previous print cartridge reservoir refill.